

AD-782 803

PROCEEDINGS OF MILITARY LIBRARIANS'
WORKSHOP (17TH) HELD AT WASHINGTON,
D. C. ON 9-12 SEPTEMBER 1973. MILITARY
LIBRARIES AND THE CHALLENGE OF THE 70'S

Naval Research Laboratory
Washington, D. C.

9 July 1974

DISTRIBUTED BY:

NTIS

National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

AD-782 803

17th
Military Librarians' Workshop
Proceedings

9-12 September 1973

Military Libraries and The Challenge
of The '70's

July 9, 1974

DDC
RECEIVED
JUL 11 1974



NAVAL RESEARCH LABORATORY
Washington, D.C.

Approved for public release. distribution unlimited.

16th - Sec. 1 - "page"

PROCEEDINGS
of
17th MILITARY LIBRARIANS' WORKSHOP
9-12 SEPTEMBER 1973

July 9, 1974

Host
Naval Research Laboratory

FOREWORD

The Naval Research Laboratory celebrated "Fifth Years of Science for the Navy and for the Nation" during calendar year 1973. In commemoration of this half century of research, the Laboratory hosted many national and international professional meetings, including the 17th Military Librarians' Workshop. The participants were greeted by Capt. J.A. Bortner, Director of Support Services, who described the research program of the Laboratory and the group was then escorted on tours of Laboratory spaces and the Technical Library.

Approximately 200 Military Librarians participated in the Workshop sessions dedicated to the theme "Military Libraries and the Challenge of the 70's." The discussions of these groups and the presentation of the general session speaker Dr. F.G. Kilgour are printed herein from notes rather than transcript, and therefore reflect the highlights, conclusions or recommendations of sessions reported.

CONTENTS

	<u>Page</u>
<i>Foreword</i>	ii
<i>Program</i>	iv
<i>Luncheon Address</i>	
OCLC..... Mr. Fredrick Kilgour	1
<i>Workshop Session</i>	
ESTABLISHING AND OPERATING SMALL LIBRARIES	Ms. Barbara Collier 4
STATISTICS (BASED ON OMB REPORT).....	Dr. Frank L. Schick 6
STINFO.....	Mrs. Sterling Atchison and Mr. Andrew Aines 8
RECON SYSTEM AT NASA	Mr. Van A. Wente 9
ERIC	Mr. W.T. Brandhorst and Ms. Nancy Helmuth 11
LIBRARY NETWORKS FOR MEDICAL DATA	Mr. William H. Caldwell 14
AUTOMATION FEASIBILITY	Ms. Susan Geddes 16
PERSONNEL PROBLEMS... ..	Mr. William Camp and Ms. Shelya White 18
<i>Participants</i>	20
<i>Sponsors</i>	27

PROGRAM

Sunday—September 9

4:00-8:00 Registration--Howard Johnson's Motor Lodge
U.S. Route 1 and Capital Beltway
Alexandria, Va. 22303

**6:00-8:00 Reception at Motel—Hosted by Mr. Richard C. McLean,
Encyclopedia Britannica**

Monday-September 10

7:00-7 45 Breakfast Buffet

7:45 Bus Transportation from Motel to Naval Research Laboratory

8:40-9:00 **Registration at NRL**
Coffee & Donuts in Lobby

3:00-11:15 NRL welcoming addresses, orientation, Capt. James A. Bortner
Tours of Library and/or Laboratory spaces

11:30 Bus Transportation to Officer's Club
Fort McNair

12:00-1:15 Cash Bar, Lunch

1:15 Bus to motel

1:30-4:00 **Workshop Sessions**

4:00-6:00 Reception at Motel—Hosted by Ms. Virginia Paige, Grolier, Inc.

Tuesday—September 11

7:30-8:30 **Breakfast Buffet**

8:30-10:00 Workshop Sessions (continued)

10:00-10:15	Coffee Break
-------------	--------------

10:15-11:45 Workshop Sessions (continued)

11:45-12:15 Cash Bar

12:30 Lunch
 Mr. F.G. Kilgour, Topic OCLC followed by discussions,
 questions and answers on Library Cooperation and Networks.

6:30-7:30 Cash Bar. Happy Hour

7:30 Banquet with entertainment

Wednesday--September 12

7:30-8:30 Breakfast Buffet

8:30-9:45 Services Meetings

9:30-10:00 Coffee Break

10:00-12:00 General Session

12:00 Lunch

1:00 Walking Tour of D.C. Libraries
 Walking Tour of Alexandria
 Individual Library Visits

OHIO COLLEGE LIBRARY CENTER

Mr. Frederick Kilgour

Mr. Kilgour stated the objectives of OCLC: (1) To make library resources available throughout a region to the activities of the region and (2) while doing this, employ technology to reduce the rise in rate of cost per unit.

In the 20 years before 1970 the rise in unit cost in libraries was 6 times that of the economy as a whole. Institutions were having desperate fiscal problems and had to evolve technologically. Central computerization is one way to achieve a lower rate per unit cost. A new book, "Economics of Academic Libraries" by William J. Baumol, published by Intl. Assn. Univ., 1973 discusses the problems.

The long range objective in OCLC is to design the system to get information to users when and where it is needed.

In Ohio, bibliographic information in the OCLC system is available to the staff and libraries. Ohio State University libraries have a remote catalog and circulation system. A user can telephone to determine if a book is in and available from any one of the 46 libraries of OSU. The book can be sent to the user and he will receive it in a day or so. No use of the card catalog is required.

Mr. Kilgour believes that public and academic library's service to their users failed after World War II. The problem is not so much the small library, because the librarian knows the collection and the users and can get them together, but rather the larger libraries which have become depersonalized. A start is with an SDI service using computerization.

OCLC is organized as a not for profit corporation. It is made up of Ohio libraries that do not have to pay income tax. The members elect nine trustees, 5 each year. They have the same responsibilities as those of any corporation. The members in Ohio know that OCLC is theirs. Last March the membership decided to expand outside Ohio. There are now 6 contracts, 5 are with regional library systems and the 6th is with LC on behalf of FLC.

The OCLC system design consists of 6 subsystems:

1. A union catalog and shared cataloging system.
2. Coding for current finalization of a serials system, except for cataloging.
3. Technical processing system which has been designed and will be programmed, planned to be operational in 15-18 months.
4. Design of an Interlibrary Loan system so that requests can be made using the online system.

5. Beginning in 1975 to have remote catalog access and circulation control. The research done at OSU in developing their system and their experience will help in developing the wider system.
6. Subject and title access available to users, hopefully in 1976. They are looking forward to automatic descriptive cataloging.

The OSU catalog is online except subjects which can be accessed by classed subject. The director of the OSU library expects to discontinue the card catalog July 4, 1976. The OSU library uses 4-5 search keys. Using this system, 90% of the time there are fewer than 10 entries. One entry can easily be distinguished from among 10. OCLC uses 3-3 search keys, the first three letters of the author and first three letters of the title. With fewer characters there are fewer errors. This method appalled classical librarians, but it works. It provides 1,275,000 author-title search keys.

The online union catalog makes resources of the region available to all participants. In early August 1,120,000 locations were in the catalog and in September 1,200,000.

In the shared cataloging system, calling a record, using it or inputting a catalog record, is one process. It has been found that 70% of the records called are already in the system. Any book is cataloged only once. Others use that cataloging, adding or changing information or correcting errors for their own production. Errors are sent to OSU to correct. The user library tells the Center how its cards are to be designed. The cards are produced in final form, ready to file in that user's particular catalog. This flexibility in card preparation and production has contributed to the success of OCLC.

A charge is made for the 1st use of a record in the system. If you get 20 copies of a book there is only one charge. There is no charge for searching or checking or for inputting a record and no charge for using any record you input. By checking the union catalog, you may determine that a nearby library has a copy and you can borrow the copy.

A major problem in system design was selection of equipment. OCLC went through a simulation procedure to select a computer. Of nine, three showed they would do the job. After a trade off study among the 3, considering cost and ease of programming, Sigma 5 was chosen. A similar procedure was used in selecting a terminal. Beehive Medical Electronics in Salt Lake City is now making a terminal called OCLC 100 display.

Telecommunications have been a problem.

One library's use of OCLC was described; at Ohio University 10 positions were dropped in processing while the number of titles processed per year went from 25,000 to 41,000. This library changed from Dewey to LC classification. If they catalog a book not found in LC they put an X at the end of their classification. All books received are checked through the terminals. If a record comes up with LC cataloging, a clerk handles the cataloging, if a record comes up without LC cataloging, a subprofessional finishes the process, and if no record comes up the book is checked every two weeks until the end of 6 weeks when the book is given to a professional for original cataloging, then added to the system.

There are 687,000 catalog records online, 50% are Marc records, 200,000 have not been used. Sometime in the future the unused records will be taken off the online system. Amount of cataloging was 3,343 titles cataloged on the system, 23,000 cards produced. The average is 22,000 cards and 3,000 items cataloged.

OCLC is not authorized by its charter to operate a national network. It is getting demands for use of the system. The Federal Government or a national organization should operate a national system. Later an international system may evolve.

In assessing the reliability of OCLC Mr. Kilgour said that terminal misbehavior has not been crippling, computers and programs are reliable (went three weeks once without a crash) and most of the time they are up and going in 15 minutes. The system is cost beneficial. For example: Ohio University saved money and at the same time production increased; changed from a full time to part time cataloger, saved \$4250 in salaries with system cost of \$2120.

Libraries taking on such a system have to redesign procedures to take advantage of it. On the bases of reliability, cost and use, the system is profitable.

During the question-answer period Mr. Kilgour was asked to explain control of circulation. He described the OSU system where a user may telephone, find whether OSU has the book and if so if it is charged out. The user gives his ID number and the book is sent from any of the libraries. It is charged by typing in the call number and also the charge is cancelled by typing in the call number. They can retrieve by author, title, call number or by borrower. The computer also sends overdue or recall notices and does not give up until the book is returned. The cost of circulation per title is less than the manual system would have been because of pay raises.

The second question requested an estimate of the cost per title for cataloging—the cost is \$2.02 to participants for 1st time use of a record in the system, including cost of telephone lines, terminal, computer and staff. In addition, catalog cards are 3.4¢ per card.

The third inquiry pertained to time required to receive catalog cards and the answer was 4-5 days. At the time they were 5 days behind. Cards are formatted and alphabetized at night on magnetic tape, then printed and packaged. United Parcel Service picks up and delivers in 1 day in Ohio.

The fourth questioner asked if contributed cataloging was monitored. It is not, error sheets come in from the library that did the cataloging and are analyzed. Only 0.634% of the input records had an error.

Mr. Kilgour was asked if the system worked with books and/or other materials. Now it is monographs only. At the end of the calendar year serials will be added. Audio-visuals are included when they are monographs, movies and music are not. Everything, including journal articles will be in due time.

Most of the remainder of the questions dealt with the OCLC-FLC contract. Mr. Russell Shank of the Smithsonian Libraries joined with Mr. Kilgour in that discussion. The contract with OCLC has been signed, but arrangements within the federal libraries are still in preliminary stages.

ESTABLISHING & OPERATING SMALL LIBRARIES

Ms. Barbara Collier

The group decided that they would rather concentrate on their own problems than generate a general document on how to set up a library from scratch. It was felt that there is enough of that type of information already available in the literature. They were more interested in benefiting from others' knowledge and experiences.

Suggested problems for discussion:

- Aquisitions,
- Interlibrary loan,
- Readers awareness or interest services,
- Staffing,
- Technical Reports—acquisition & control
- Orientation—readers instruction,
- Staff procedure manuals,
- NTIS—GPO—& other services, and
- Journal subscriptions.

It was decided to have a complete exchange of information about the libraries of those attending the session—phone numbers, special subjects and collections, publications available (holdings lists, book catalogs, etc.)

Further explanation of discussions.

I. Acquisitions

- A. Use professional tools of larger libraries in your area—NUC, ULS, LC proof sheets, reference and bibliographic tools. If you are a one or two man operation, it may mean you'll have to close the library a few hours per week to do this, but the benefits to your agency should make this easy to justify.
- B. Design a form letter to use in obtaining free material where ever possible. Go directly to sources and do not hesitate going to authors. They are usually flattered and will send more than you requested. Include self addressed and stamped labels.
- C. When starting a library from scratch, it is important to buy bibliographic tools and indices first, then start building the collection. Interlibrary loan will hold you over, also, use services (DDC, NTIS, etc.)

II. In a small library it is absolutely essential that goals and priorities be established and that they be flexible. You constantly have to prove that you are necessary to the agency. As your collection grows and your services improve, your business should increase and be more sophisticated.

III. Staffing

- A. A technician who has been properly trained can do 80% or more of cataloging and interlibrary loan. Teach them to go to the larger libraries in the area and to use such tools as NUC and ULS.
- B. Although the menial jobs must be done, also give them important assignments, even if it means you occasionally must do the menial. Don't ask them to do things you haven't done in their view at least once. Very effective! In a small library it must be a TEAM EFFORT.

IV. Interlibrary loan

- A. Attend conferences and workshops to make contacts. Join organizations and make visits to libraries in your immediate area to establish contacts, discover sources, and determine those to whom you may be of some assistance.
 - B. Make your resources known to others.
 - C. It was suggested that too much reliance of interlibrary loan and on having technicians do most of it may reduce the need to have a professional librarian on the staff. It was also pointed out that the librarian should be using that new-found time to promote and extend the program, doing more detailed references, searches, and bibliographies.
 - D. One participant, from Canada, stated that interlibrary loan is dying out in Canada. He supported this and said that if you want the profession to be on a level with doctors and lawyers, you must charge the public for services.
- V.
- A. A procedures manual saves time in the long run and aids in on-the-job training. It can cut down on "supervision time."
 - B. If you visit your users in their working environment you will find it easier to determine and recognize their needs. They will be flattered by your interest and will be more aware of the library offerings.
 - C. Users' profiles aid in identifying interests and needs. A special interest service is very important, personal service to users is a must for the small library. Keep up on journals and materials and notify people of articles in which they might be interested. Send copies of tables of contents and abstracts from journals, reports, etc.
 - D. Have a copy of your users manual included in orientation packets usually given to new employees. Offer "classes" on how to use various indices and other reference tools, usually very well received when presented carefully.

VI. Microfilm is necessary for a small library. Approach it on that basis, have a good collection, and "sell" it to users. Lesser cost means more material. Have what they want before they need it.

STATISTICS

Dr. Frank L. Schick

The workshop discussion leader, Dr. Frank L. Schick, introduced the topic of Library Statistics, by giving a brief description of the development of the U.S. Library Statistics System.

Libraries in the U.S. received official recognition August 6, 1789, the first day the U.S. Congress convened, when Mr. Elbridge Gary introduced a motion to establish a library for use of the National legislature. Due to other National priorities it took until 1802 for the Library of Congress to become operational.

Between the establishment of the Library of Congress and today, the country and its libraries have expanded dramatically. Today there are in the U.S. more than

- 7,000 Public Libraries
- 2,700 College & University Libraries
- 40,000 Public School Libraries
- 2,200 Federal Libraries
- 10,000 Special Libraries

From the 1870's until the 1930's, statistics of public schools were collected and published by the U.S. Office of Education with some regularity.

From 1938 to 1958 nationwide surveys on public school and academic libraries were conducted on a five to seven year cycle. From 1958 the scope and frequency of library surveys were increased considerably.

National Center for Educational Statistics of the Office of Education was established in 1966, and the responsibility for educational statistics, including those for libraries, transferred to it.

Federal Library Survey of 1972. Information has been collected, edited and tabulated. When the text is completed it will be published by the Federal Library Committee. The Federal Library Committee, in cooperation with NCES of the Office of Education hopes that the Federal Libraries will be re surveyed every 3 to 4 years.

In as much as no form is initially perfect, it is anticipated that modification will be made to this 1st National effort to collect data on all Federal Libraries.

In the discussion on the form some participants of the workshop group called attention to the fact that some of the items were not specific enough and could lead to different interpretations by the library filling out the questionnaires. Dr. Schick pointed out that the

Library Statistics Operations Handbook, publication of which has been awarded to the American Library Association, should help to clarify such problems.

It was recommended that the military Librarians go on record to request that (a) the Federal Library Committee continue to publish the Federal Library Survey about every 3 years and make distribution on demand. (b) Clarification of some of the terms and definition of the items used in the 1972 questionnaire for the next survey. (c) That the statistics committee review the survey and consider ways and means of improving the form by deleting items of little or no significance and adding items that may have been omitted.

In this connection, contact should be maintained with Mr. Robert W. Frase, Director of Library Statistics Handbook (OE).

Other statistical surveys which were discussed included the Bureau of Labor Statistics—NCES—BLLR Supply and Demand Study of Library Manpower which is co-sponsored by these 3 agencies and will be published early in 1974. It will include employment outlook data from the present to at least 1985.

STINFO

Ms Sterling Atchinson and Mr. Andrew Aines

The September 10 session was chaired by Ms. Sterling Atchinson of Headquarters Naval Materiel Command. The STINFO program in DoD was discussed with emphasis on the President's policy for national technology transfer. Several publications were distributed including the August 1973 NSF "Federal Technology Transfer" and NAVMAT Instruction 5700.2 "Military-Civilian Technology Transfer and Cooperative development."

The September 11 session was chaired by Mr. Andrew Aines, Director of the Office of Science Information Services, National Science Foundation. Mr. Aines lectured on the trends in science and technical information with particular stress on international aspects. He recommended that librarians and administrators examine several reports including the following: OECD Publication "Information in 1985-A Forecasting Study of Information Needs and Resources" by Georges Anderla. He also recommended the New York Conference Board reports "Information Technology Initiatives for Today-Decisions that Cannot Wait," particularly part 2 of a study on "Information Technology. Some Critical Implications for Decision Makers 1970-1990." He also referred to the Greenberger Report at Johns Hopkins University.

The primary message was that more managerial support was needed in order to assure satisfactory progress in the technical information field.

RECON SYSTEM AT NASA

Mr. Van G. Wente

NASA/RECON is a computerized system that enables users to help themselves in a hurry to the specialized knowledge stored in NASA's huge collection of aerospace documents. With RECON the user can communicate with a computer that contains complete, up-to-date bibliographic data from the hundreds of thousands of aerospace reports and journal articles that the NASA Office of Technology Utilization has collected, indexed, and stored. These scientific and technical documents range backward in date from those that have just entered the system to some that predate the start of the NASA collections, begun in 1962. RECON files are updated every week. There is a new program by which books will be added to the NASA data base. The Library of Congress Marc II format will be converted to the NASA STIMS format. The books would be retrievable by standard numbers and by all normal methods. It would be possible to determine which other NASA Centers had a given book or periodical. Savings should occur with all book processing being done at the NASA Scientific and Technical Information Facility at College Park, Maryland. Ordering would be done separately by the Centers and sent via College Park. Only certain technical and scientific sections of the Marc Tapes will go in the NASA system.

A RECON station or terminal consists of a keyboard, a cathode ray tube, and a teleprinter. The user tells the computer what to find by typing and pushing special function keys in the keyboard; the computer replies by displaying the answers in the cathode ray tube; and the teleprinter writes down those the user wants to keep. Searches may also be printed out at the computer site for overnight mailing to the searcher.

The RECON keyboard is similar to, but more elaborate than a typewriter keyboard. One set of keys, containing all the letters of the alphabet, with punctuation marks and symbols, shift keys, shift lock, and a spacing bar, are arranged and used as a standard typewriter. To the right of these are a different colored bank of numbered keys like those on an adding machine. These are equivalent to the numbered keys on the typewriter-like keyboard. The command keys in other colors are arranged across the top portion of the keyboard.

To use RECON one first presses the key labeled BEGIN, and then the TRANSMIT button. A display appears which asks for the search title, name of person conducting the search, name of person receiving the results (if different). It lists the files available for searching and asks which ones the user wishes to search. After answers to these questions are typed in, the TRANSMIT button is pressed again. The search can now begin. Each group of documents indexed to a term will have an identifying number called a set. Adjoining will be the number of documents in that set. Next the user presses the EXPAND key and types in the principal search subject and presses TRANSMIT. The computer will then display an alphabetized list of terms on either side of the term. If the term is not a recognized indexing term the user can choose one that is by using the SELECT command and the reference number for that term. If the user wants to see a citation he can use the command key DISPLAY and the

appropriate set number, type the number 1, and press TRANSMIT and the computer will display a complete citation from this group. If this is not what is desired the EXPAND key can be touched and another term typed in, the TRANSMIT key pushed and another display of alphabetized terms will appear. One of these can be selected and by using the COMBINE key and typing in 1*2, which means combine sets 1 and 2, the user can then determine the number of items indexed under both the terms. Then the user can request the computer to DISPLAY set e. The key labeled TYPE can then be pushed and the citations will be printed by the teleprinter if a record is desired. If the number of citations needed is larger, the PRINT key can be pushed and the computer will print out the list of citations later and they will be mailed to the user. This does not tie the computer for long periods. On the printout the computer tells how long the search took, exactly which steps were taken and in what order.

At NASA dedicated users or information personnel operate the terminal. Information people are subject specialists usually with a BS degree in a basic science. It takes months to acquire real expertise in technical information indexing and retrieval. At present indexing is done to relatively specific low levels but not to the extent of a natural language except for certain title information. It is hoped that with machine aided indexing a system of combining the specifics of free text with controlled vocabularies will be built. A microfilm index of reports with permuted title listings and subject terms can be used manually as an alternative to RECON.

RECON serves only NASA centers. However, the software is available to others and has indeed been adapted for nearly a dozen other systems. NASA now has central cataloging of books, either from Marc tapes or original cataloging. Eventually books in all NASA centers will be in RECON and all centers can query the computer on all books. With RECON one can do away with cards. RECON also uses Library of Congress subject headings. The subject terms can have a maximum term length of 42 characters. However, RECON uses its free text capability to go beyond this length. It looks for significant words in the sentence, creates an inverted file and uses words as retrieval points as they relate to each other: a proximity search for two words is possible. NASA will rely on its well defined subject area to keep terms to a manageable size.

RECON is on from 8:00 to 7:30. Most centers enter almost 300 commands a day with the terminals at larger Centers going all the time. RECON communication costs are about \$25,000 per year for all 24 terminals on five leased lines. RECON has dedicated leased lines using a multidrop party line system.

Programming is now being finished to permit teletype dial-up terminal use of RECON. Service will be available first to low-use NASA centers, then contractors at regional dissemination centers and other government agencies. Dial-up terminals will inhibit sampling because of the slower speed, currently 30 characters per second compared with 300 per second in the CRT terminal. NASA is planning cooperation with other information systems such as DDC and AEC to permit sharing of data base resources.

THE EDUCATIONAL RESOURCES INFORMATION CENTER,
WITH PARTICULAR REFERENCE TO THE ERIC CLEAR-
INGHOUSE ON LIBRARY AND INFORMATION SCIENCES

Richard E. Stern*

ERIC, which stands for Educational Resources Information Center, is an information system that provides access to educational literature. The ERIC system is comprised of four levels: governmental, non-profit, commercial and user.

The governmental level is represented by the National Institute of Education (NIE) and Central ERIC which serves as policy maker, funder, and monitor.

The non-profit level consists of eighteen Clearinghouses on contract with NIE. The Clearinghouses are located at colleges and universities and professional associations. Each of the Clearinghouses specializes in a particular area of education in line with the expertise of the "host" organization. For example, the Modern Language Association operates the Clearinghouse on Languages and Linguistics. The Clearinghouses acquire fugitive documents in their respective subject areas. These documents along with the journal literature are cataloged, abstracted and indexed.

The commercial level manages the data base generated by the Clearinghouses, puts out indexes and other published products, and reproduces ERIC documents in microfiche and hard copy.

At the commercial level, the ERIC Facility, operated by Leasco Systems and Research Corporation, gathers and edits the computerized data base of ERIC documents which is published in a monthly journal, RIE (Research in Education) by the U.S. Government Printing Office. RIE includes a listing of input by Clearinghouse as well as indexing by subject and author (personal and institutional).

Current Index to Journals in Education (CIJE) is published by a commercial firm, Macmillan Information Corporation. CIJE covers 700 education publications abstracted and indexed by the Clearinghouses. The majority of these publications represent the core periodical literature in the field of education. The other periodicals indexed in CIJE represent coverage devoted to peripheral literature relating to the field of education.

The ERIC Document Reproduction Service, operated by Leasco Information Products, makes available copies of documents entered into the ERIC system, depending upon copy-right status and reproduction permission. Where copyright permission is granted for both hard copy and microfiche, the document is made available at Level I. At Level II, the document is restricted to microfiche reproduction. At Level III, no document reproduction is available through EDRS. For Levels I and III, the non-ERIC source and price of the

*This paper was developed from the notes of discussion groups led by W.T. Brandhorst and Nancy Helmuth.

document is supplied. Hard copy (in photocopy form) is available at \$3.29 per one hundred pages. Microfiche copy sells at \$0.65 per title.

The fourth level of ERIC encompasses the various users. ERIC services educators, students, librarians, researchers, and others.

To illustrate the work of the ERIC Clearinghouses, the operation of the Clearinghouse on Library and Information Sciences will be examined and discussed here. Since the year 1970, ERIC/CLIS has been operated by the American Society for Information Science, a Washington based professional association dedicated to the improvement of the information transfer process through research, development, application, and education. The ERIC staff consists of a director, assistant director, a librarian, an abstractor/indexer, a document processing coordinator, and one clerk. An eight member advisory board composed of leading technical experts in the library and information sciences disciplines, provides direction to the Clearinghouse and functions as an interface between the Clearinghouse and its diverse user groups.

Two-thirds of the documents received by ERIC/CLIS are unsolicited. Many of these documents are received on a standing arrangement from professional associations, library schools, and other institutions. Other documents are sent by authors who know about the work of the Clearinghouse. The ERIC Facility forwards documents from the Federal government and international organizations. The literature of the field is scanned to find citations to appropriate documents. Letters with copyright release forms are sent to authors.

Criteria for processing documents and choosing which ones are to be selected for announcement in RIE are set forth in the ERIC Operating Manual. The primary consideration is whether a document falls within the scope of the Clearinghouse. Second, relevancy, up-to-dateness, general interest, and innovativeness are considered. Other criteria include copyright status and legibility (in reproduction). Only English language publications are processed. Journal material is not entered into RIE.

Once a document is chosen for RIE, it goes through several processing steps. A resume sheet is filled out with the essential information for record-keeping purposes. Second, a duplication check is undertaken. A subject interest of the Clearinghouses overlap the same document is sometimes sent to two or more Clearinghouses to the ERIC Facility for input into RIE. To aid the Clearinghouses in avoiding duplicate input, a list of all titles in RIE is issued annually with quarterly and semi-annual cumulations. Monthly records of the Clearinghouses' input intended for, but not yet entered into RIE, are distributed. In addition, the ERIC Facility undertakes a careful check of document input.

After a duplicate check has been made, copyright status is examined. Oftentimes, the further processing of documents is delayed until non-copyrighted status is determined or copyright permission is granted.

Documents that are retained by Clearinghouses but not entered into RIE from the "local collections."

The local collection together with documents entered into RIE are cataloged for retrieval at the Clearinghouse.

Each of the RIE documents is abstracted and indexed. Abstracts do not exceed 200 words. Whenever possible, author abstracts are utilized. Indexing is done through

descriptors and identifiers. Descriptors are assigned in accordance with the Thesaurus of ERIC Descriptors, a structured list of terms which provides for control of and consistent use of the vocabulary. Differentiation is made of major and minor descriptors. Articles are indexed in RIE under major descriptors. Both major and minor descriptors can be retrieved through a computer search. A minimum of one to a maximum of five major descriptors may be assigned. The total number of descriptors is limited only by the space available on the form. Identifiers, terms that usually cannot be structured into the Thesaurus because of variant spellings and different styles of entry, are also assigned. Identifiers include proper names of persons, geographical locations, and trade names. One identifier may be tagged as major. An identifier is allowed a maximum of fifty characters including spaces.

To increase the visibility of its output, ERIC/CLIS arranged with the leading journals in the fields of library and information sciences to announce the availability of ERIC material. The ERIC/CLIS monthly input to RIE is sent to journal editors who select documents of interest in the ERIC system, ERIC/CLIS exhibits at national meetings of professional associations, holds workshops, sponsors training sessions, and issues a newsletter.

For input into Current Index to Journals in Education (CIJE), ERIC/CLIS annotates and indexes 23 journals assigned by Central ERIC. Only articles are indexed. No more than five major descriptors not more than a total of ten indexing terms (descriptors and identifiers) may be used per article. Annotations are limited to a maximum of fifty words.

Information Analysis Publications (IAP's) constitute another segment of Clearinghouse output. IAP's are research reports commissioned by the Clearinghouses on some topic where a particular need for further investigation exists. The IAP's take the form of state-of-the-art reviews, research reviews, and bibliographies. Since 1970 ERIC/CLIS has issued over thirty IAP's.

ERIC's files of RIE's and CIJE's are entered onto magnetic tape. These ERICTAPES are available for purchase from the Leasco Systems and Research Corporation. Tape searchers can be purchased through several commercial firms, universities, and other organizations.

As of January 1, 1974, the ERIC Clearinghouse on Library and Information Sciences ceased operation. Its functions were combined with those of the ERIC Clearinghouse on Educational Media and Technology to form the ERIC Clearinghouse on Information Resources, located at Stanford University.

LIBRARY NETWORKS FOR MEDICAL DATA

Mr. William H. Caldwell

Mr. William Caldwell, who directed the workshop session, explained the basic concepts of networking. He pointed out that NLM's data bases operate by on-line communication through about 40 node cities, and that data pathways are re-routed from one node to another if there is trouble in transmission.

Medical data addressed at this workshop fall into four categories:

- (1) Computer assisted instruction;
- (2) Bibliographic retrieval;
- (3) Document delivery;
- (4) Locator information identifying who has a needed item.

Mr. Caldwell then presented the National Library of Medicine's MEDLINE (MEDLARS-On-Line; MEDLARS is an acronym for Medical Literature Analysis and Retrieval System). MEDLINE has been operational on the National Library of Medicine's computer since October 1971 and provides 190 to 200 libraries access to the data base. The demonstration illustrated the potential for accessing the MEDLINE system through:

- (1) subject
- (2) author's name
- (3) code number for the journals
- (4) title word

Response-time goals for this system have been set at 10 seconds, but for 250,000 searches last year the average was about 5 seconds. Longer delays, when they occur, are due to problems with the hardware, the telecommunications system, or the number of users on-line at any one time.

A CATLINE demonstration was then presented by Ms. Lillian Kozuma. CATLINE, NLM's Current Catalog on-line, covers about 130,000 monographs and technical reports, and includes the holdings at the National Library of Medicine, the Countway Library at Harvard, and the SUNY Library at Syracuse. Ms. Kozuma provided detailed material showing how to obtain full entries, searching by authors, abbreviated title forms, call numbers, etc.

Miss Betsy Humphreys then demonstrated the SERLINE (Serials on-line) file, and explained that it provides access to holdings information on 5,600 biomedical serial titles at 117 medical libraries. This locator information enables inter-library loan procedures to begin with the nearest library holding the serial.

Dr. Harold Wooster discussed the CAI network (Computer-Assisted Instruction), outlining work at Marquette (in anatomy instruction), Ohio State and Massachusetts General

Hospital (in clinical studies), and the University of Illinois (computerized simulated counter). Using these programs, the student proceeds from wherever his answers direct him. He may also comment upon the technics or therapy he is directed to use, and the program may be corrected accordingly. At the University of Texas in Galveston, instead of the student operating a terminal, a mini-computer makes it possible to set up the program on slides. With 78 institutions using CAI monthly, computer time on-line is about 2,000 hours. Costs are based upon a sliding scale depending upon use. One advantage of CAI is that it permits students to work at their own rate of speed. This has been especially valuable at the University of Miami in a Ph.D./M.D. training program.

Dr. Fred Clayton presented TOXLINE (Toxicology data on-line), an information retrieval tool in areas of environmental pollution, industrial and occupational health and safety, pharmacology and toxicology. This data base includes NLM's Toxicity Bibliography (1968 to present), abstracts from Health Aspects of Pesticides Abstract Bulletin, Chemical-Biological Activities abstracts (1965-1971), abstracts from International Pharmaceutical Abstracts (1970-1972) and Abstracts of Health Effects of Environmental pollutants (1972 to present). The data may be printed either off-line or on-line as desired, as with the other files discussed.

In summing up, Mr. Caldwell made reference to four factors having an impact on libraries which have access to on-line systems:

- (1) Impatience on the part of the user when his request is not immediately completed, and by the on-line librarian when the system is down;
- (2) Circulation policy, which sometimes has to be changed when the load on serials increases because of the greater use generated by on-line bibliographies; (for example, one library cut its loan period from 2 weeks to 48 hours to meet the demand);
- (3) Staffing changes caused by an increased demand for service which may generate from 10-20 times as much reference volume but which can be met with increased efficiency and time saving;
- (4) Increased costs for on-line services, both in rent or purchase of hardware and in charges for connect time. In determining the cost of a MEDLINE search, a fair estimate is 15 minutes of preparation and handling time and 15 minutes on-line. One study made in an institution where references greatly increased showed a total cost of approximately \$5.00 per search.

Mr. Caldwell concluded by stating that early in 1974 MEDLARS II will be operational and will provide the following additional capabilities:

- (1) An improved file-building and maintenance capability;
- (2) Vocabulary expansion;
- (3) Searchable authority files.

AUTOMATION FEASIBILITY

Ms. Susan Geddes

At the first session of the Automation Feasibility workshop, Ms Susan Geddes called the meeting to order and explained that she is a computer specialist who has worked at the National Library of Medicine for 3 1/2 years.

Ms Geddes explained what OCLC is, what it helps to do, and what it is doing. The Federal Library Committee started an informal group which has become the Task Force on Automation. Mary Huffer, Russell Shank, and others are members. It has a two-pronged program: (a) Extremely long range- to set up a Federal Library Community Cooperative Service Center; and (b) for the immediate, Ms Geddes suggested that something be done now and up graded later. The FLC proposal to OCLC has the Library of Congress as the prime contractor. Ten libraries are paying for one year for the testing of the system after it becomes operational, in about 6 months. It was proposed to start with a Tymshare communication tie in with OCLC.

An adapted Beehive terminal with 196 characters will be available and could be used instead of Tymshare Terminals. Two or three Washington area libraries will try out the system "as is" within the next month and the system should be operational by 31 December, 1973. Using networks and terminals is one way of giving better library service.

During the discussion it was stated that in one case although a computer and computer personnel were available, there was a communications problem, however the librarians could not do the work alone. Teamwork is necessary. Librarians need to have expertise in providing quality input.

A library that has partially automated has learned three lessons; (1) that they did not know very much about their manual operations, (2) that an analyst must be a full time job at a high level, with knowledge of both computer and libraries, and (3) that interface between the two is needed in order to communicate.

To get the staff over the fear of "the little black box" the Army Library gave a programmed instruction course on duty time, which will be followed by a group class. It is important to let the staff know what is being done and to get them involved. Librarians tend to fear the technology of the computer, however they can get technicians to handle the interface with the computer, Mr. Weiss thought that one should experiment with small programs first to give the staff some experience, but that the greatest benefit from an automation study will be the study of the manual operations.

Mr. Weiss wanted to know how to convince the comptroller of your needs. Ms Geddes suggested that he be given a feasibility study which includes intangible assets as well. Systemate before you automate. Col. Johns said that if you keep your project experimental,

your automation can be kept in the research mode and therefore not costed out. If librarians, instead of scientists, perform searches a cost reduction can be shown. It was felt that success using the argument of cost reductions will depend a great deal upon the personality of each particular comptroller. It may help to show the comptroller something that has been done offline and explain how much more could be done online.

The library needs to prove that its efficiency is improved and show an improvement in service. Build something into the system that helps users. The librarian should ask questions, determine what he needs and what will be useful.

A question was asked concerning the format of cards from OCLC. They can be programmed for your particular format, however, if you want a Dewey Classification number, you must add it at the terminal.

On the second day, Ms Geddes briefly repeated what OCLC is and the interest of FLC in OCLC.

The Beehive Terminal, which is used by OCLC, is behind in construction because of a delay by the company making the circuitry. The keyboard configuration is greater on this terminal, with larger character set. None of the production line terminals are used with OCLC.

There is a need for communications on OCLC, e.g., a newsletter on terminals, leased line cost, etc. FLC is the resource center concerning terminals, specifications, models, etc.

The military librarians workshop is an information group not an action group. Recommendations can be made and have been made in the past. It is important that something be done regarding trends.

1. Military librarians have seen a trend toward networking.
2. Go through DDR & E, National Commission on Libraries to Installation commanders.
3. Military librarians are not writing articles for journal, etc. and do not have much time.
4. Commanders need papers on what is being done, what is needed. Librarians should get together to submit information as guidelines.

Librarians should take a long range view as a group in order to develop 5/10 year plans. FY 74 budgets are in, FY 75 have to be projected.

PERSONNEL PROBLEMS

Mr. William Camp and Mrs. Shelya White

Introductory comments were made by Bill Camp, Chief of Social Science Section, Washington Area Office at the Civil Service Commission. Mr. Camp gave a general outline of the organization of CSC, explaining that the Central Office of the Commission consists of 9 main bureaus and that Central Office is also supplemented by 10 regional offices and 65 area offices throughout the United States, and explained their function regarding recruitment, placement and hiring of eligibles for civil service positions. Participants were referred to Pamphlet BRE-9, a Directory of Federal Job Information and Training Centers, listing toll-free telephone numbers for employment/hiring information.

Also discussed were the six basic recruiting functions:

- 1) Announce examinations
- 2) Conduct examinations, or get necessary forms
- 3) Rate and evaluate applicants
 - using standard schedules, or
 - written tests
- 4) Notify candidates of rating
- 5) Construct lists of eligibles
- 6) Provide other sources of candidates — FACS (Federal Automated Career Systems)

Mrs. Shelya White, Examiner for Professional Librarian positions, was introduced and discussed the basic qualifications for Librarians in the 1410 series. Mrs. White explained the present system of rating Librarian applications and compared it to the new computerized, self-coding system to be implemented before the end of the calendar year, 1973. Statistics were given concerning activity in FY '72 and '73 regarding number of requests made, certificates cancelled (and sample of reasons), selections made etc.; approximate pass/fail rate for those taking the written test and purpose of the test.

Some problem areas were brought up and discussed by the entire session. Among those were, 1) appropriated and non-appropriated fund positions and overseas employment; 2) performance appraisals and SF-171's and the importance of having complete, accurate data to determine eligibility; 3) properly documenting agency requests and mis-translation of a Library's needs by Personnel officials (and consequently sometimes poor quality of eligibles on civil service referral lists because of this); 4) problem employees and how to cope with them; 5) discussed CSC 1143, new self-coding form, at length, especially possibility of rewording explanation of item 12 concerning subject-matter specialties.

Several handouts were distributed, including the Librarian Announcement #422 revised in February of 1973; CSC Form 1143, Supplemental Qualifications Statement (self-coding form); Qualifications Standards for 1410 series; and an example of the complete SF-39, Agency Request for Certification.

Mr. Camp and Mrs. White both emphasized their availability in answering inquiries at any time and that the Commission is service-oriented to assist the general public and agencies regarding employment problems. It is their hope that through this session the agencies represented will have a better understanding of the existing examining system for professional Librarian positions and the role of the Commission regarding referral of applicants, and will be better able to document future requests to fill vacancies.

PARTICIPANTS
17TH MILITARY LIBRARIANS WORKSHOP

Ms. Lucille Achauer, Naval Ship Systems Command Technical Library, National Center Number 3, Washington, D.C. 20360

Mr. Andrew Aines, Office of Science Information Service, National Science Foundation, Washington, D.C. 20550

Ms. Rose Akers, Post Library, Bldg. 464, White Sands Missile Range, New Mexico 88002

Ms. Concetta Anaclerio, Concepts Analysis Agency, Bethesda, Maryland 20014

Mr. Alfred Anzalone, Plastics Technical Evaluation Center (PLASTEC), Picatinny Arsenal, Dover, New Jersey 07801

Ms. Mary Ash, Canadian Forces College, Toronto, Canada

Ms. Jacqueline W. Baldwin, U.S. Army Institute for Military Assistance, Fort Bragg, North Carolina 28307

Mr. Richard S. Parrows, Office of the Judge Advocate General, Washington, D.C. 20370

Ms. Louise C. Barry, U.S. Army Armor Center, Fort Knox, Kentucky 40121

Ms. Doris P. Baster, Naval Research Laboratory, Washington, D.C. 20375

Mr. Eugene G. Beary, U.S. Army Natick Laboratories, Natick, Massachusetts 01760

Mr. Richard Benedict, Air University, Maxwell Air Force Base, Alabama 36112

Ms. Donna L. Ber, National Security Agency, Fort Meade, Maryland 20755

Ms. Janet Brooks, Defense Communications Agency, Washington, D.C. 20305

Ms. Carolyn P. Brown, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland 20014

Ms. Virginia I. Bruch, The Army Library, Pentagon, Washington, D.C. 20310

Ms. Mary A. Buckner, The Army Library, Pentagon, Washington, D.C. 20310

Ms. Sybil Bulloch, U.S. Army Aviation School, Fort Rucker, Alabama 36360

Mr. Leon Burg, U.S. Army Tank-Automotive Command, Warren, Michigan 48090

Ms. Isabelle K. Burtnett, Naval Missile Center, Photo/Graphics Department, Point Mugu, California 93042

Ms. Madge Busey, Post Library, Fort Belvoir, Virginia 22060

Ms. Eva Butler, Frankford Arsenal, Bridge and Tacony Streets, Philadelphia, Pennsylvania 19137

Mr. William H. Caldwell, Department of Health, Education and Welfare, Bethesda, Maryland 20014

Mr. William Camp, Civil Service Commission, Washington, D.C. 20550
 Mr. Irving G. Carlson, Naval Electronics Laboratory Center, San Diego, California 92152
 Ms. Mary D. Carmichael, Naval Training Equipment Center, Orlando, Florida 32813
 Mr. John P. Carrier, Scientific and Technical Information Office, Harry Diamond Laboratories, Washington, D.C. 20438
 Ms. Cleo S. Cason, 700 Watts Drive, S.E., Huntsville, Alabama 35801
 Ms. Loutrell E. Cavin, Headquarters SAC, Offutt AFB, Nebraska 68113
 Mr. Philip Chaplin, National Defence Headquarters, Ottawa, Ontario, Canada KIA OK 2
 Ms. Elizabeth A. Clagett, Office of the General Counsel—Law Library, Crystal Plaza #5, Washington, D.C. 20360
 Mr. Gerald M. Coble, Naval Training Support Command, Naval Air Station, Pensacola, Florida 32508
 Ms. Barbara Collier, U.S. Army Engineer District, St. Louis, Missouri 63101
 Mr. John L. Cook, Headquarters USAF Military Personnel Center, Randolph AFB, Texas 78148
 Ms. Brenda G. Corbin, Naval Observatory, Washington, D.C. 20390
 Mr. Michael A. Costello, Picatinny Arsenal, Dover, New Jersey 07801
 Ms. Alice Cox, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314
 Ms. Grace Crisp, Naval Ordnance Laboratory, White Oak, Silver Spring, Maryland 20910
 Mr. John P. Cummings, Nimitz Library, U.S. Naval Academy, Annapolis, Maryland 21402
 Ms. Margaret Daley, Naval Ship Systems Command, National Center Number 3, Washington, D.C. 20360
 Mr. Aaron S. Dann, Naval Research Laboratory, Washington, D.C. 20375
 Ms. Bessie M. Daughtry, Air Training Command, Randolph AFB, Texas 78148
 Ms. Lora-Frances Davis, Brooke Army Medical Center, Fort Sam Houston, Texas 78234
 Ms. Suzanne E. De Carre, Naval Oceanographic Office, Washington, D.C. 20373
 Mr. Ernest De Wald, Defense Mapping Agency, Naval Observatory, Washington, D.C. 20305
 Ms. Jean E. Dickinson, Air Force Flight Test Center, Edwards AFB, California 93523
 Ms. Nancy C. Dickinson, Naval Education and Training Support Detachment, Norfolk, Virginia 23511
 Ms. Frances Doyle, Headquarters Cutler Army Hospital, Fort Devens, Massachusetts 01433
 Ms. Virginia Eckel, Air Force Institute of Technology, Wright Patterson Air Force Base, Ohio 45433
 Ms. Aileen V. Ellis, Base Library, FL 2823, Eglin Air Force Base, Florida 32442
 Ms. Beatrice J. England, Base Library, Headquarters 1100th Air Base Wing, Bolling AFB, Washington, D.C. 20332
 Ms. Dorothy W. Evans, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C. 20012

Ms. Patricia C. Farrell, National War College Library, Ft. Lesley J. McNair, Washington, D.C. 20315

Ms. Dorothy Fayne, Navy Education and Training Support Center, Brooklyn, New York 11232

Ms. Frances A. Fisher, Naval Weapons Center, China Lake, California 93555

Ms. Doris Folen, Naval Research Laboratory, Washington, D.C. 20375

Ms. Rosalie O. Forst, Aberdeen Proving Ground, Maryland 21005

Ms. Edith J. Fraser, Headquarters, Fort Huachuca, Fort Huachuca, Arizona 85613

Mr. Raymond Frith, Defense Documentation Center, Alexandria, Virginia 22314

Ms. Margaret L. Gallagher, Naval Avionics Facility, Indianapolis, Indiana 46218

Ms. Susan Geddes, National Library of Medicine, Office of Computer and Communications Systems, Bethesda, Maryland 20014

Ms. Caroline S. Ghebelian, Naval Explosive Ordnance Disposal Facility, Indian Head, Maryland 20640

Ms. Patricia H. Gipe, Defense Systems Management School, Fort Belvoir, Virginia 22060

Ms. Charleen Gordon, Bunker Hall, Fort Lee, Virginia 23801

Ms. Lucy R. Greene, Bunker Hall, Fort Lee, Virginia 23801

Mr. Thomas R. Greene, U.S. Army Infantry School, Fort Benning, Georgia 31905

Ms. Eldeen J. Greenland, U.S. Army Test and Evaluation Command, Aberdeen Proving Ground, Maryland 21005

Mr. Walter B. Greenwood, Coordinator Of Naval Libraries, Navy Library, Washington, D.C. 20390

Ms. Donna K. Griffiths, Medical Library, Offices of the Surgeons General, USA/USAF Washington, D.C. 20314

Ms. Lois J. Guise, Naval Air Development Center, Warminster, Pennsylvania 18974

Ms. Ida M. Hendry, Goodfellow AFB, Texas 76901

Ms. Bernice J. Hester, J. C. Breckinridge Library, Education Center, MCDEC, Quantico, Virginia 22134

Ms. Victoria S. Hewitson, Office of Naval Research, Branch Office London, Box 39 New York 09510

Ms. Ruth Hodge, Army War College, Carlisle Barracks, Pennsylvania 17013

Ms. Helen Holt, AFSC Hqs. Tech. Library, Andrews AFB, Washington, D.C. 20334

Ms. Una D. Huggins, Army Library Program, Office of the Adjutant General, Washington, D.C. 20314

Mr. Howard N. Hume, U.S. Army Materiel Command, Alexandria, Virginia 22304

Ms. Susan Hunchar, National Security Agency, Ft. George G. Meade, Maryland 20755

Ms. Doris Hunter, Carlisle Barracks, Pennsylvania 17013

Mr. Peter H. Imhof, Naval Research Laboratory, Washington, D.C. 20375

Mr. William R. Irvin, Jr., Bureau of Recruiting and Examining, Civil Service Commission, Washington, D.C. 20415

Ms. Lois V. Jeffers, Naval Ammunition Depot, Crane, Indiana 47522

Lt. Col. Claude J. Johns, Jr., USAF Academy, Colorado 80810

Mr. Duane Johnson, Base Library FL 3018/SSL, Chanute AFB, Illinois 61568

Mr. Tom Jones, USA Mobility Equipment Research and Development Center, Building 314, Fort Belvoir, Virginia 22060

Mr. Stan Kalkus, Naval Underwater Systems Center, Newport, Rhode Island 02840

Ms. Irene Kanno, The Army Library, Pentagon, Washington, D.C. 20310

Mr. Frederick Kilgour, Director, Ohio College Library Center, Columbus, Ohio 43212

Ms. Demaris Klika, U.S. Army Transportation School, Fort Eustis, Virginia 23604

Mr. Paul Klinefelter, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314

Ms. Gene Kubai, The Army Library Pentagon, Washington, D.C. 20310

Mr. Robert Lane, Air University, Maxwell AFB, Alabama 36112

Ms. Virginia M. Larkin, Naval Supply Systems Command, Washington, D.C. 20376

Mr. Benedict Laupacis, National Defence Headquarters, Cartier Square, Ottawa, Canada

Ms. Mary Lawsine, Combat Support Group, APO, Seattle 98737

Ms. Lois V. Leach, Armed Forces Staff College, Norfolk, Virginia 23511

Mr. Martin Levin, Frankford Arsenal, Philadelphia, Pennsylvania 19137

Ms. Harriet Z. Levy, Naval School of Health Care Administration, National Naval Medical Center, Bethesda, Maryland 20014

Mr. Frank London, Defense Logistics Studies Information Exchange, Army Logistics Management Center, Fort Lee, Virginia 23801

Ms. Ruth A. Longhenry, U.S. Army War College, Carlisle Barracks, Pennsylvania 17013

Ms. Olga Luchaka, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314

Prof. George R. Luckett, Naval Postgraduate School, Monterey, California 93940

Ms. Marie N. Lusk, Special Services Libraries, Fort Bliss, Texas 79916

Ms. Cathryn C. Lyon, Naval Weapons Laboratory, Dahlgren, Virginia 22448

Ms. Eunice M. Lyon, Medical Librarian, Malcolm Grow USAF Medical Center, Andrews AFB, Washington, D.C. 20331

Ms. Helen Mc Claghry, Lowry AFB, Colorado 80230

Mr. James P. McConnel, Naval Research Laboratory, Washington, D.C. 20375

Ms. Mary L. McMullin, Naval Undersea Center, Pasadena, California 91107

Mr. George L. Mahoney, Amphibious Warfare Library, Naval Amphibious School, Naval Amphibious Base, Norfolk, Virginia 23521

Ms. Anne S. Marshall, Naval Coastal Systems Laboratory, Panama City, Florida 32401

Mr. Robert L. Martin, Army Natick Laboratory, Columbus, Ohio 43214
 Ms. Nel Mathys, Rome Air Development Center, Griffis AFB, New York 13441
 Ms. Christian J. Mayo, U.S. Army Military Police School, Fort Gordon, Georgia 30905
 Mr. Real Menard, Defence Research Est. Valcariter, Courcellette P. Q., Canada
 Ms. Ruth Meredith, Rock Island Arsenal, Rock Island, Illinois 61201
 Mr. Robert Messinger, Defense Mapping Agency, St. Louis Air Force Station, Missouri 63118
 Ms. Marjorie E. Miller, National Security Agency, Fort George G. Meade, Maryland 20755
 Mr. William W. Mills, Jr., Defense Communications Agency, System Engineering Facility, Reston, Virginia 22090
 Ms. Irene H. Montgomery, Legislative Law Library, Office of the Judge Advocate General, Department of the Army, Washington, D.C. 20310
 Mr. Charles R. Moore, U.S. Army Foreign Science and Technology Center, Charlottesville, Virginia 22901
 Ms. Jeanne H. Moore, 21st ABGp/DPSL, APO Seattle 98742
 Ms. Mildred M. Morris, Special Services Libraries, Fort Gordon, Georgia 30905
 Ms. Ruth Mullane, USAREUR Reference Library, Heidelberg, Germany
 Ms. Mary Murphy, Defense Mapping Agency Topographic Center, Washington, D.C. 20315
 Mr. Michael F. Murphy, Army Materials and Mechanics Research Center, Watertown, Mass. 02172
 Ms. Dorothy Mylin, Fitzsimmons Army Medical, Denver, Colorado 80230
 Ms. Josephine Neil, Navy Education and Training Support Detachment, Charleston, South Carolina 29408
 Ms. Mary O'Connor, Fort Frontenac Library, Fort Frontenac, Kingston, Ontario
 Ms. Marie O'Mara, Naval Submarine Medical Research Laboratory, Submarine Base, Groton, Connecticut 06420
 Ms. Ingjerd O. Omdahl, Headquarters U.S. Army Materiel Command, Alexandria, Virginia 22304
 Ms. Eileen Pickenpaugh, Naval Research Laboratory, Washington, D.C. 20375
 Ms. Glenna Piersall, Main Post Library, 101 1st Airborne Division, Fort Campbell, Kentucky
 Ms. Theima Player, Strategic Systems Project Office, Washington, D.C. 20375
 Ms. Christine Pogue, The Army Library, Pentagon, Washington, D.C. 20310
 Ms. Nannette M. Pope, Armed Forces Radiobiology Research Institute, National Naval Medical Center, Bethesda, Maryland 20014
 Mr. Louis Rains, Office of Naval Research, Boston Branch Office, Boston, Massachusetts 02210
 Ms. Mary V. Randolph, The Army Library, Pentagon, Washington, D.C. 20310
 Mr. Charles V. Rayment, Defence Scientific Information Service, Defence Research Board, Ottawa, Canada

Ms. Pearl O. Robinson, Naval Ship Engineering Center, Philadelphia Division, Philadelphia, Pennsylvania 19112

Mr. Phillip Rochlin, Naval Ordnance Station, Indian Head, Maryland 20640

Ms. Ruth T. Rogers, Naval Aerospace Medical Institute, Pensacola, Florida 32512

Mr. Murray Rogofsky, Naval Oceanographic Office, Washington, D.C. 20373

Ms. Shelia N. Roos, Naval Ordnance Laboratory, White Oak, Silver Spring, Maryland 20910

Mr. John E. Rosenberg, Harry Diamond Laboratories, Washington, D.C. 20438

Mr. George E. Rucker, Jr., Office of Naval Research, Ballston Tower #1, Arlington, Virginia 22217

Ms. Louise A. Russell, U.S. Army War College, Carlisle Barracks, Pennsylvania 17013

Ms. Laurel B. Saunders, White Sands Missile Range, New Mexico 88672

Mr. Hubert E. Sauter, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314

Ms. Blanche Savage, Medical Library, Scott Air Force Base, Illinois 62225

Dr. Frank L. Schick, U.S. Office of Education, Washington, D.C. 20202

Ms. A. Elizabeth Schwartz, Army Library Program, DAAC/EMR-L, Washington, D.C. 20314

Prof. Earl Schwass, Naval War College, Newport, Rhode Island 02840

Ms. A. Janelle Scoggin, Conrad Technical Library, Fort Gordon, Georgia 30905

Mr. Robert Severance, Air University Library, Maxwell Air Force Base, Alabama 36112

Ms. Mary L. Shaffer, The Army Library, Pentagon, Washington, D.C. 20310

Ms. Roberta Shearin, The Army Library, Pentagon, Washington, D.C. 20310

Ms. Blanch Shiflett, Defense Systems Management School, Fort Belvoir, Virginia 22060

Mr. Joshua L. Smith, American Society for Information Science, Washington, D.C. 20036

Ms. Dorothy T. Smither, Naval Command Systems Support Activity, Washington Navy Yard, Washington, D.C. 20374

Ms. Virginia J. Snyder, Base Library, FL 4208, Andrews, AFB, Washington, D.C. 20331

Mr. George J. Stansfield, Library Director, The National War College, Washington, D.C. 20319

Ms. Patricia H. Steadman, Defense Nuclear Agency, ATTN: APTL, Washington, D.C. 20305

Ms. Lola Stephens, The Army Library, Pentagon, Washington, D.C. 20310

Ms. Josephine E. Sullivan, The Army Library, Pentagon, Washington, D.C. 20310

Mr. George Tate, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314

Ms. Marguerite Thomas, Naval Field Medical Research Laboratory, Camp Lejeune, North Carolina 28584

Mr. Levi Thompson, U.S. Army Foreign Science and Technology Center, 220 7th St., N.E., Charlottesville, Virginia 22901

Ms. Mariana J. Thurber, Headquarters Department of Army, Office of the Adjutant General, Washington, D.C. 20314

Ms. Claire Tozier, Naval Regional Medical Center, Jacksonville, Florida 32214

Mr. Raymon Trisdale, The Logistics Library, Bunker Hall, Fort Lee, Virginia 23801

Ms. Thelma S. Turnage, Marine Corps Base, Camp Lejeune, North Carolina 28542

Mr. Normand L. Varieur, Military Academy Library, West Point, New York 10996

Ms. Alretta Viehdorfer, USAF Accounting and Finance Center, Denver, Colorado 80205

Mr. George K. Vrooman, Watervliet Arsenal, Watervliet, New York 12189

Ms. Anne W. Wall, Edgewood Arsenal, Maryland 21010

Ms. Mary Louise Wallace, U.S. Army Armor School, Fort Knox, Kentucky 40121

Ms. Nancy B. Walsh, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C. 20319

Mr. James A. Walters, Naval Ship Engineering Center, Prince Georges Center, Hyattsville, Maryland 20782

Ms. Sylvia J. Webber, U.S. Army Materiel Command, Alexandria, Virginia 22304

Mr. Egon A. Weiss, Military Academy, West Point, New York 10996

Mr. Van A. Wente, National Aeronautics and Space Administration, Washington, D.C. 20546

Mr. William R. Werk, U.S. Army Electronics Command, Fort Monmouth, New Jersey 07703

Ms. Janice C. Weston, U.S. Army Ordnance Center and School, Aberdeen Proving Ground, Maryland 21005

Ms. Mary E. Williams, General Counsel Library (Navy), Washington, D.C. 20360

Ms. Wanda Woodburn, Bolling Air Force Base, Washington, D.C. 20332

Ms. Helen Woody, Aerospace Research Laboratory, Wright-Patterson Air Force Base, Ohio 45433

Ms. Jeannette B. Yates, Naval Weapons Station, Yorktown, Virginia 23691

Ms. Margrett E. Zenich, Office of Chief of Engineers, Washington, D.C. 20314

Ms. Kathryn Zuzick, National Military Command Systems Support Center, Pentagon, Washington, D.C. 20310

MILITARY LIBRARIANS' WORKSHOPS

- 1st - 1957: Air University
Maxwell Air Force Base, Alabama
(Proceedings: AD 660919)
- 2nd - 1958: Army Artillery and Missile Center
Fort Sill, Oklahoma
(Proceedings: AD 824675)
- 3rd - 1959: Naval Postgraduate School
Monterey, California
(Proceedings: AD 479447)
- 4th - 1960: Armed Services Technical Information Agency
Washington, D.C.
(Proceedings: AD 243000)
- 5th - 1961: Air Force Academy
Colorado Springs, Colorado
(Proceedings: AD 665760)
- 6th - 1962: White Sands Missile Range
New Mexico
(Proceedings: AD 493785)
- 7th - 1963: Naval Ordnance Laboratory
Silver Spring, Maryland
(Proceedings: AD 493137)
- 8th - 1964: Air Force Weapons Laboratory
Albuquerque, New Mexico
(Proceedings: AD 632300)
- 9th - 1965: Military Academy
West Point, New York
(Proceedings: AD 638928)
- 10th - 1966: Navy Electronics Laboratory
San Diego, California
(Proceedings: AD 645982)
- 11th - 1967: Air Force Institute of Technology
Wright-Patterson Air Force Base, Ohio
(Proceedings: AD 669362)
- 12th - 1968: US Army War College
Carlisle Barracks, Pennsylvania
(Proceedings: AD 685843)

- 13th - 1969: The Naval War College
Newport, Rhode Island
(Proceedings: AD 710395)
- 14th - 1970: Industrial College of the Armed Forces
Washington, D.C.
(Proceedings: AD 732461)
- 15th - 1971: Headquarters, United States Air Force
San Antonio, Texas
(Proceedings: AD 761819)
- 16th - 1972: US Army Missile Command
Redstone Arsenal, Alabama
(Proceedings: AD 759494)
- 17th - 1973: Naval Research Laboratory
Washington, D.C.

Future Plans

- 18th - 1974: *Fort Huachuca*
Arizona
- 19th - 1975: *Air Force Academy*
Colorado Springs, Colorado